

CLAIMS

We claim as our invention:

- (1) An apparatus comprising:

a radio which makes a wireless communications via a predetermined access point;

a non-volatile storage device which stores an identification information of a network connection and an information which indicates that an access point for connection to the network is a hidden access point where the hidden access point has not issued the identification information; and

a connection confirmation unit which confirms the connection by attempting an actual connection to the hidden access point after accessing the information from said non-volatile storage device.

- (2) The apparatus according to Claim 1, further comprising:

identification information acquiring unit which acquires the predetermined identification information by scanning the identification information for designating a connection partner; and

connection executing unit which executes the connection to one of a plurality of access points of the network having the predetermined identification information acquired by said identification information acquiring unit and the access point to which the connection is confirmed by said connection confirmation unit.

(3) The apparatus according to Claim 2, further comprising:

radio control unit which stops a transmitting and receiving radio when the identification information stored in said non-volatile storage device is not acquired by said identification information acquiring unit and the connection confirmation for the identification information stored in said non-volatile storage device is not made by said connection confirmation unit.

(4) The apparatus according to Claim 1, wherein said non-volatile storage device stores the identification information of the network appended with an order of priority for the connection.

(5) The apparatus according to Claim 1, wherein said non-volatile storage device stores the information indicating the access point having issued a network name in association with the identification information of the network.

(6) An apparatus comprising:

non-volatile storage device which stores the information of a network to make a wireless LAN connection;

determination unit which determines whether the connection to the network having its information stored in said non-volatile storage device is possible; and

radio control unit which powers off a transmitting and receiving radio used to make the wireless LAN connection while the power of a system is turned on, only when said determination unit determines that a connection to any of the networks having their information stored in said non-volatile storage device is not possible.

(7) The apparatus according to Claim 6, wherein said determination unit determines whether the connection to the network having its information stored in said non-volatile storage device is possible by scanning the identification information and determines whether the connection to the network having its information stored in said non-volatile storage device is possible by attempting an actual connection.

(8) The apparatus according to Claim 6, wherein said determination unit determines whether the connection to the network having its information stored in said non-volatile storage device is possible by performing one process selected from the group consisting of a scan of the identification information or an attempt to establish an actual connection to determine whether the connection to the network having its information stored in said non-volatile storage device is possible.

(9) A apparatus comprising:

- a radio which makes a wireless communications via a predetermined access point;
- a connection candidate list storing unit which stores a connection candidate list which includes an information of a network connection;
- a connection unit which attempts a connection to a network included in the connection candidate list stored in said connection candidate list storing unit; and
- a set-up unit which sets the information indicating the hidden access point in the connection candidate list when a network name for identifying the network is not confirmed for the network to which the connection is attempted by said connection unit.

(10) The apparatus according to Claim 9, wherein said set-up unit sets the information indicating the access point with a confirmed name in the connection candidate list when the network name which identifies the network is confirmed for the network to which the connection is attempted by said connection unit.

(11) An apparatus comprising:

a radio which makes a wireless communications via a predetermined access point;

an attitude fluctuation sensing unit which senses an attitude fluctuation of said apparatus; and

radio control unit which powers on a transmitting and receiving radio which makes the wireless communications on the basis of the attitude fluctuation of said apparatus sensed by said attitude fluctuation sensing unit.

(12) The apparatus according to Claim 11, further comprising:

an access point detecting unit which detects whether there is at least one connectable access point; and

a radio control unit which powers off the transmitting and receiving radio while the power of a system is turned on, when a connectable access point is not detected by said access point detecting unit;

wherein said radio control unit turns on the transmitting and receiving radio from a state where said transmitting and receiving radio is turned off by said radio control unit.

(13) The apparatus according to Claim 11, wherein said attitude fluctuation sensing unit determines movement of said apparatus based on an attitude fluctuation sensed by an attitude fluctuation sensor.

(14) An apparatus comprising:

a radio which makes a wireless communications via a predetermined access point;

an attitude fluctuation sensing unit for sensing an attitude fluctuation of the apparatus; and

a scan executing unit which executes a scan for the access point on the basis of the attitude fluctuation of said apparatus sensed by said attitude fluctuation sensing unit.

(15) The apparatus according to Claim 14, further comprising:

a profile storing unit which stores a profile of the access point, wherein said scan executing unit stops the scan when said attitude fluctuation sensing unit senses that the attitude of said apparatus is not fluctuated.

(16) The apparatus according to Claim 14, further comprising:

profile storing unit which stores a profile of the access point, wherein said scan executing unit executes the scan for the profile stored in said profile storing unit when said attitude fluctuation sensing unit senses that the attitude of said apparatus is fluctuated.

(17) A method comprising the steps of:

connecting to a predetermined wireless network through a connection point;

acquiring a network name by scanning for an access point in an environment where an apparatus is placed;

acquiring an information of a hidden access point having issued no network name from a connection candidate list of the wireless network stored in a predetermined memory;

comparing the network name acquired by the scan and the hidden access point acquired from the connection candidate list in an order of priority for the wireless network; and

connecting to the named network which has a higher priority as determined in said comparing step.

(18) The method according to Claim 17, further comprising:

attempting a connection to the hidden access point when the wireless network of the hidden access point acquired from the connection candidate list has a higher priority by the comparison in the order of priority.

(19) A method comprising the steps of:

connecting to a predetermined wireless network through a connection point;

acquiring information indicating that an access point for connecting to the wireless network is a hidden access point where an identification information for a connection list table storing the identification information of the wireless network for use by an apparatus to connect to the wireless network is not present; and

confirming the connection to the wireless network by attempting an actual connection to the hidden access point.

(20) The method according to Claim 19, further comprising the steps of:

retrieving a predetermined access point by scanning the identification information; and

executing the communications via one of a group consisting of a retrieved access point and the hidden access point to which the connection is confirmed on the basis of the information stored in the connection list table.

(21) The method according to Claim 19, further comprising the step of:

stopping a wireless transmitting and receiving radio when the connection to the wireless network having the information stored in the connection list table is not possible.

(22) A method comprising the steps of:

connecting to a predetermined wireless network connection;

confirming whether there is any access point for connection to a wireless network by an apparatus;

stopping a wireless transmitting and receiving radio when an access point for connection to the wireless network does not exist;

sensing an attitude fluctuation of the apparatus; and

resuming the wireless transmitting and receiving radio that is stopped on the basis of the sensed attitude fluctuation.

(23) The method according to Claim 22, wherein said sensing step comprises sensing that there is any attitude fluctuation by comparing a value of the sensor data obtained from an attitude fluctuation sensor and a value obtained while the apparatus is in a still state.

(24) A method comprising the steps of:

connecting to a predetermined wireless network connection;

sensing an attitude fluctuation in the apparatus; and

executing a scan for an access point according to a profile on the basis of the attitude fluctuation of the apparatus.

(25) The method according to Claim 24, wherein the attitude fluctuation of said sensing step comprises causing an attitude fluctuation sensor to sense whether the apparatus has an attitude fluctuation after the elapse of a predetermined time, and the scan of said executing step comprises executing the scan when it is determined that the apparatus has an attitude fluctuation after the elapse of the predetermined time.

(26) A program product comprising:

a computer usable medium having computer readable program code embodied therein for use with a computer, the computer readable program code in said program product implementing functions effective to:

make wireless communications for connecting to a predetermined wireless network;

acquire a network name by scanning for an access point in an environment where the computer apparatus is placed;

acquire information of a hidden access point having issued no network name from a connection candidate list of the wireless network stored in a memory;

compare the wireless network from the name acquired by the scan and the wireless network of the hidden access point acquired from the connection candidate list in an order of priority; and

execute the connection to the access point with the network name of the wireless network acquired by the scan, when the wireless network with the network name acquired by the scan has a higher priority by said comparison in the order of priority.

(27) The program product according to Claim 26, further effective to:

cause the computer apparatus to implement a function of attempting the connection to the hidden access point, when the wireless network of the hidden access point acquired from the connection candidate list has a higher priority by said comparison in said order of priority.

(28) A program product comprising:

a computer usable medium having computer readable program code embodied therein for use with a computer, the computer readable program code in said program product implementing functions effective to:

make wireless communications for connecting to a predetermined wireless network;

acquire an information indicating that an access point for connection to the wireless network is a hidden access point where an identification information from a connection list table storing the identification information of a wireless network is not present; and

confirm the connection to the wireless network by attempting an actual connection to the hidden access point.

(29) The program product according to Claim 28, further effective to:

cause the computer apparatus to implement a function of retrieving a predetermined access point by scanning the identification information; and

execute the communications via one of a group consisting of a retrieved access point and the hidden access point to which the connection is confirmed on the basis of the information stored in the connection list table.

(30) The program product according to Claim 28, further effective to:

cause the computer apparatus to implement a function of stopping a transmitting and receiving radio when the connection to the wireless network having the information stored in said connection list table is not possible.

(31) A program product comprising:

a computer usable medium having computer readable program code embodied therein for use with a computer, the computer readable program code in said program product implementing functions effective to:

make wireless communications for connecting to a predetermined wireless network;

acquire an information of the wireless network from a connection list table storing the information of the wireless network;

determine whether a connection to the wireless network having its information stored

in the connection list table is possible; and

powering off a transmitting and receiving radio while the power for said computer apparatus is turned on, when it is determined that the connection to all the wireless networks having the information stored in the connection list table is not possible.

(32) A program product comprising:

a computer usable medium having computer readable program code embodied therein for use with a computer, the computer readable program code in said program product implementing functions effective to:

make wireless communications for connecting to a predetermined wireless network;

confirm whether there is at least one access point of the wireless network to which the computer can connect;

stop a transmitting and receiving radio when there is no access point to which the computer can connect;

sense an attitude fluctuation of the computer apparatus; and

resume the transmitting and receiving radio that is stopped on the basis of the sensed attitude fluctuation.

(33) A program product comprising:

a computer usable medium having computer readable program code embodied therein for use with a computer, the computer readable program code in said program product implementing functions effective to:

make wireless communications for connecting to a predetermined wireless network;

execute a scan for a scheduled profile;

sense an attitude fluctuation in the computer apparatus;

execute the scan for the profile when the attitude fluctuation in the computer apparatus is sensed; and

roam an access point when the access point listed in the profile with a higher priority than at present is found as a result of the scan.